

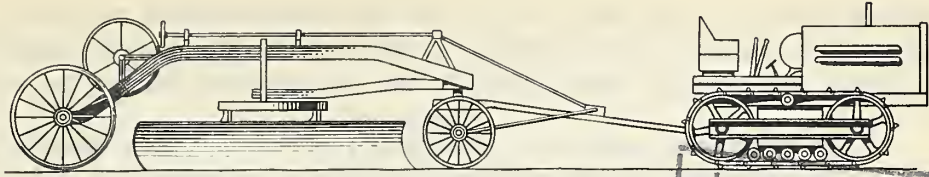
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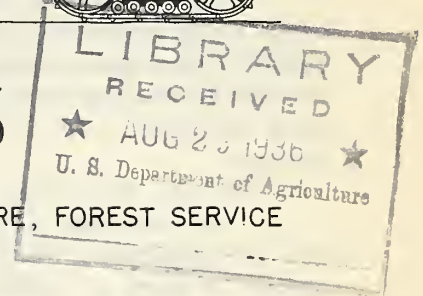
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# CONSTRUCTION



## HINTS

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE  
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### SYNCHRONIZING COMPRESSORS

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Anyone who has ever operated two or more compressors on the same air line knows how difficult it is to make them divide the work equally. One is usually overheating from working too much and the other will do most of the idling.

The following is a sample, easily constructed, tried and proved method for positively dividing the work equally between two or more compressors, no matter their make or size.

To understand this method one first needs to understand the operation of the unloading pilot valve. When the pressure in the compressor tank gets sufficiently high to trip the pilot valve, the valve does two things simultaneously: it sends pressure to the slow down assembly on the carburetor and so idles the motor, and also sends pressure to the unloading system on the compressor and so keeps the compressor from pumping. Then when the pressure has dropped sufficiently in the tank to trip the pilot valve again, the valve releases the pressure from these two places and so starts the compressor to

(over)

pumping again. This last action is not simultaneous as there is a check valve in the tube leading to the unloading system which causes the motor to get its speed before the compressor starts to pump.

The proposed method of controlling two or more compressors is simplicity itself. It is merely a matter of connecting all of the control systems together with copper tubing, and then plugging all of the pilot valves but one. Let that one valve control all of the control systems. In that way all of the compressors pump and idle together.

We are now using a LeRoi Rix, Model C-160, a Schramm, Model 240, and an Ingersoll Rand, Model 185. The pilot valve on the Schramm seems to have a little more capacity than the others, so we are using it to control the others. The unloading action does not seem to be sluggish on any of the compressors. We have them connected together with about 15 feet of quarter inch copper tubing between each of the compressors. Five-sixteenths copper tubing would be satisfactory, but I would not advise using any larger as it would take too much air to fill the tube.

It is necessary to connect to each control system on the carburetor side of the pilot valves, as the check valves in the tubes to the unloading sides ruin the action. The easiest way to make this connection is to place a compression tee in the place of a compression elbow, where the pilot valve tube is connected to the slow down assembly on the carburetor. If it is desired to operate one of the compressors separately at any time, a compression nut may be soldered shut and used to plug this tee.

Whenever a new setup is made the copper tube or tubes should be connected only to the one compressor which controls the others. This compressor should then be started and the pressure built up until the pilot valve trips. This will blow out any dirt which may have accumulated in the control tubes while they were disconnected. You are then ready to tie on to the other compressors.

The pilot valve or valves which are not to be used should be adjusted sufficiently tight so that they will not trip before the one which is to do the controlling. Then the air escape hole in each of them should be plugged with some kind of packing. This is to prevent the pilot valves which are not being used, from letting the pressure escape from the control pilot valve.

## A REMINDER

The Editor realizes that there are special instructions regarding the care and maintenance of all machinery used in the Regions. This does not supersede any previous instructions, but is merely sent out as a reminder.

The following was submitted by The General Excavator Company, Marion, Ohio, but is applicable to other machinery.

### DON'T

- FORGET TO READ THIS.

### DON'T

- forget to grease all bearings daily.
- forget to wipe up all excess grease after greasing machine.
- let you machine get dirty.
- let wire ropes get crossed on drums.
- ride the brakes.
- pull too hard on drum clutch control levers; only a moderate pull is necessary on account of easytouch booster mechanism.

### DON'T

- keep machine too far away from the work.
- swing before bucket is out of bank or sweep with shovel dipper.
- put ordinary grease on gear teeth; use a good gear compound.
- let clutch and brake bands get dirty.
- forget to keep all bolts tight; check once a week.
- let water get low in radiator.

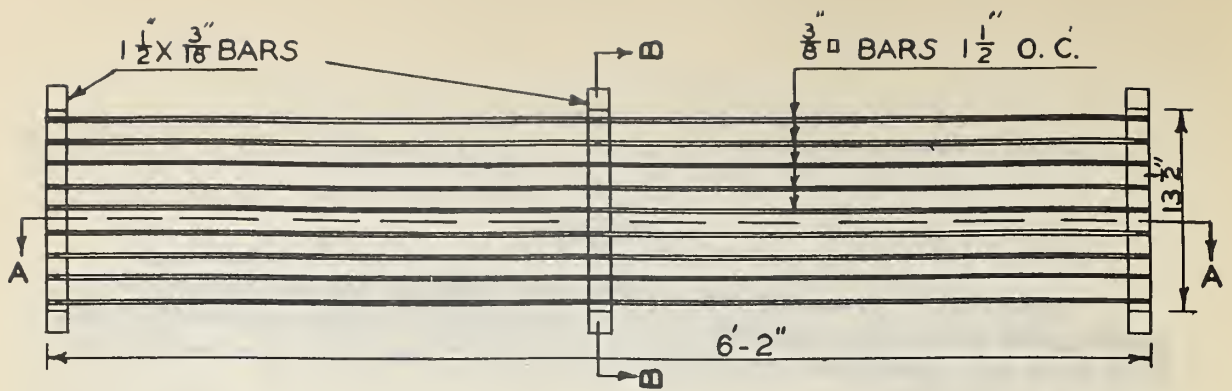
### DON'T

- forget to check engine crankcase oil level morning and noon.
- use engine crankcase oil too long without changing - change after every 40 to 50 hours of running.
- run out of fuel oil on diesel engines; you will have to bleed fuel lines before you can start again.

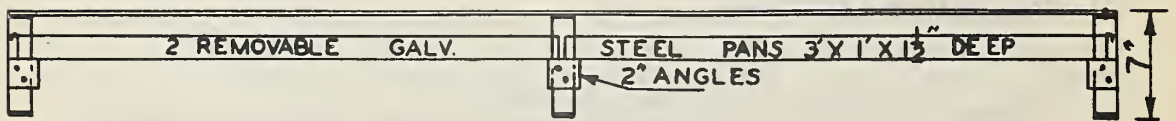
### DON'T

- forget to keep water in storage battery up to proper level.
- forget to keep all adjusting bolts well greased.

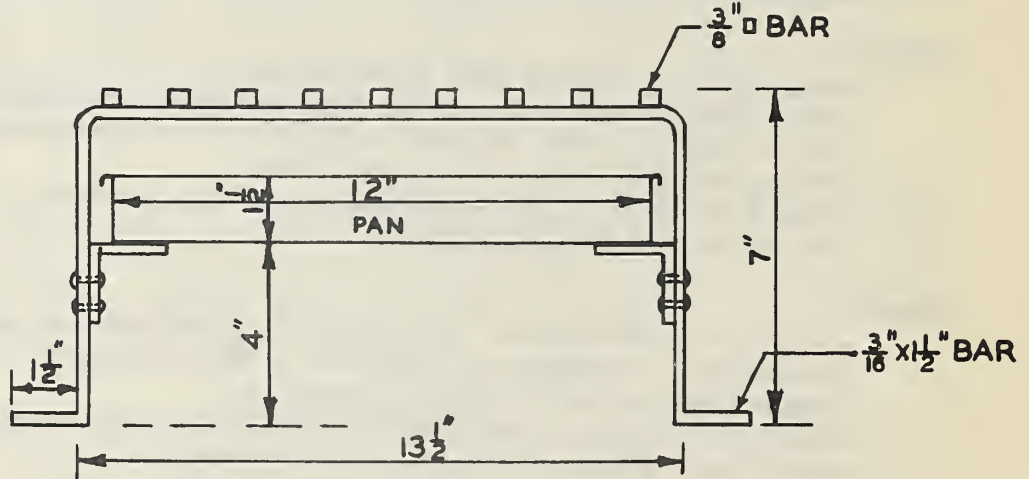




PLAN  
SCALE 1"=1'



SECTION A-A  
SCALE 1"=1'



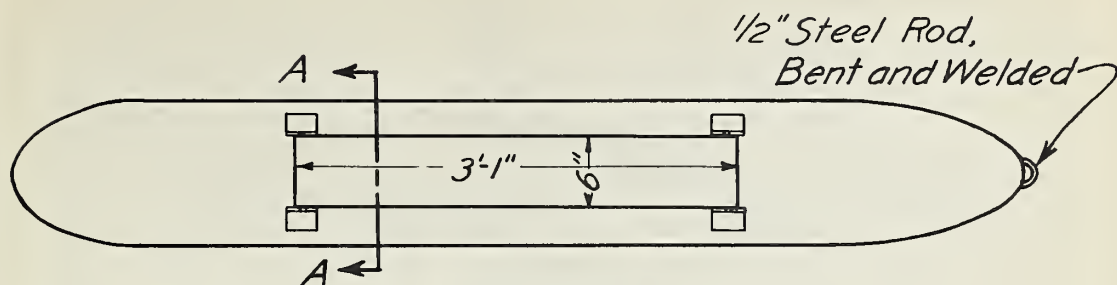
SECTION B-B  
1/4" SIZE

ALLEGHENY NATIONAL FOREST  
METAL DRIP TROUGH  
FOR  
OIL HOUSE

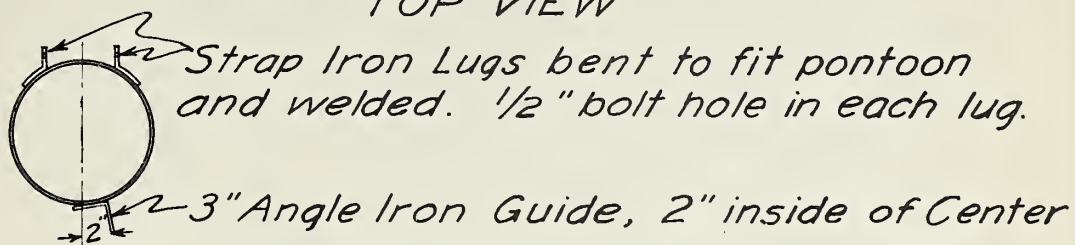
SCALE SHOWN

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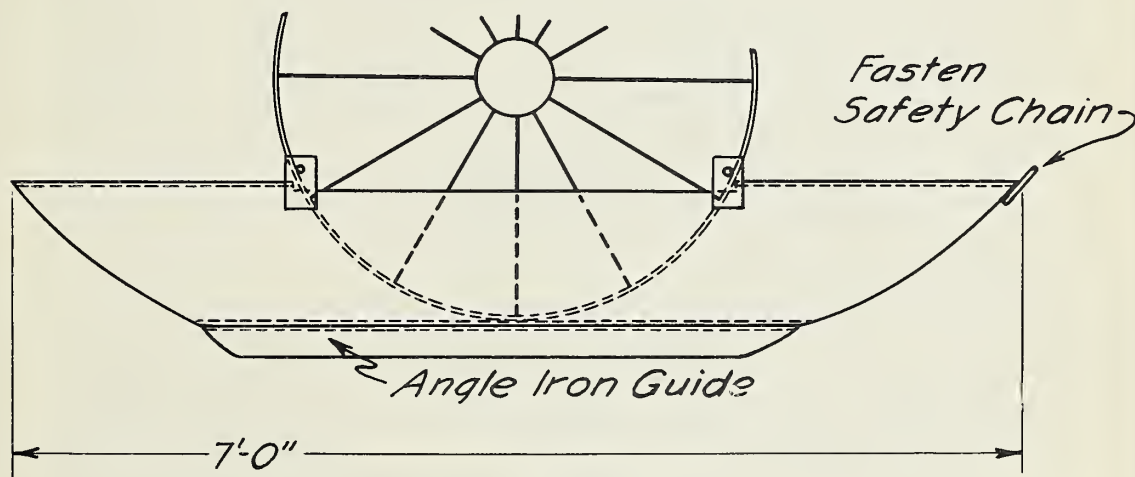
# SKETCH OF GRADER WHEEL PONTOON



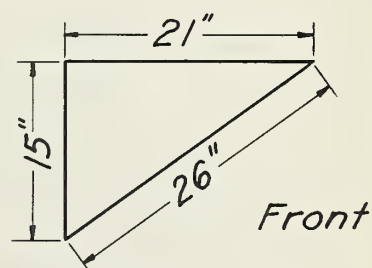
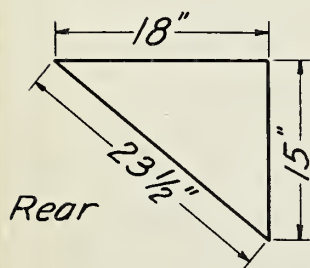
TOP VIEW



SECTION A-A



SIDE VIEW



TEMPLATES FOR CUTTING ENDS  
Cut from Tar Paper or other material

Scale 3/4" = 1'-0"

